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IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 14. (Canceled)

15. (Currently Amended) The method of ~~claim 14~~ claim 16, wherein said measuring of impedance includes measuring voltage and current in a transmission line of the wafer process.

16. (Currently Amended) ~~The method of claim 14, further comprising:~~ A method for monitoring wafer temperature during wafer processing, comprising:

measuring an impedance of a load within the wafer process;

determining a temperature of the wafer based upon the measured impedance:

setting a backflow gas pressure and a dc clamping voltage to a series of combinations of values;

measuring wafer temperature for the various processing parameters during the experimental runs at each of the combinations of backflow gas pressure and dc clamping voltage;

measuring impedance for each measured wafer temperature;

correlating the measured impedance to the measured wafer temperature to provide correlated data;

comparing the measured impedance and the correlated data to determine a temperature of the wafer; and

controlling at least one of said backflow gas pressure and dc voltage to adjust said temperature of said wafer,

wherein the impedance is measured at multiple frequencies during the experimental runs.

17. (Original) The method of claim 15, further comprising modulating at least one of said dc voltage and said backflow gas pressure for at least one selected frequency.

18. (Original) The method of claim 17, wherein when the dc voltage is modulated the backflow gas pressure is set to a constant value, and

wherein when the backflow gas pressure is modulated, the dc voltage is set to a constant value.

19. (Canceled)

20. (Original) The method of claim 16, further comprising repeating said setting, said temperature measuring, said impedance measuring and said correlating for a series of sets of different processing parameters and wherein said comparing includes determining which of said sets of processing parameters is most similar to processing parameters for an actual process run.

21. (Currently Amended) The method of ~~claim 14~~ claim 16, further comprising controlling at least one of backflow gas pressure and dc voltage in response to said measuring to adjust said temperature of the wafer.

22. (Original) The method of claim 16, wherein the backflow gas pressure is set in a range of 1 Torr to 100 Torr.

23. (Original) The method of claim 16, wherein the dc clamping voltage is set in a range of 500 to 2000 volts.

24. – 32. (Canceled)